

REMARKS

The Office Action notes that claims 22-67 are currently pending in the application. Claims 22-67 have been renumbered as claim 1-46. For purposes of addressing the Office Action, however, Applicants will refer to these claims by their originally designated numbers. Claims 40, 51, 52 and 67 have been cancelled. Various claims have been amended and new claims 68-71 have been added. Support for new claims 68-71 can be found in the originally filed application at page 9, lines 7-10 and Fig. 3. Claims 22, 38, 55, 62 and 68 are the only pending independent claims.

The Office Action (1) objected to claims 38-54 and claims 51-54 under 37 CFR §1.75(c); (2) objected to the amendment filed 9/5/03 under 35 USC §132; (3) rejected claims 42 and 59 under 35 USC §112; (4) rejected claims 22-31, 33-38, 40, 41, 46-50, 55, 57, 58, and 63-67 under 35 USC §102(b); and (5) rejected claims 44, 45, 61, and 62 under 35 USC §103(a). Applicants respond to the Examiner's objections and rejections below.

37 CFR § 1.75(c) Objections

The Office Action objected to claims 38-54 under 37 CFR §1.75(c) as being in improper dependent form. Applicants have rewritten claim 38 as a method claim in independent form and respectfully submit that this claim as well as dependent claims 39-54 are now in proper form.

The Office Action also objected to claims 51-54 under 37 CFR §1.75(c) as being in improper dependent form for failing to limit the method of use recited by independent claim 38. Applicants hereby cancel claims 51 and 52 and traverse the objection to claims 53 and 54. Claims 53 and 54 limit the method of use recited by independent claim 38 by limiting the step of "introducing a gas fluidized particle stream through the inlet port at a given volume flow rate."

35 USC § 132 Objections

The Examiner objected to claims 43 and 60 under 35 USC §132. The Examiner alleges that the amendment filed 9/5/03 introduced new matter into the disclosure. Applicants respectfully submit that the amendment filed 9/5/03, specifically claims 43 and 60, did not introduce new matter into the disclosure.

The Office Action states “the Examiner cannot find any disclosure of the ‘radial introduction of the gas’ as claimed in claims 43 and 60.” Applicants direct the Examiner to Figure 3 which illustrates the radial introduction of the gas. In addition the specification discloses the “inlet port is located in a side of the bottom section” [p 6, line 18-19] and “the inlet port is constructed about a substantially horizontal axis and the axis of the inlet port is substantially perpendicular to the axis of the bottom and top sections [p 7, line 14-16]. This is the definition of a radial inlet. Therefore, the objection to claims 43 and 60 based upon 35 USC §132 should be withdrawn.

35 USC § 112 Rejections

The Office Action rejected claims 42 and 59 under 35 USC §112, second paragraph, alleging that it is not clear “how the axes of rotation of the flow patterns are primarily horizontal.” The Office Action further states, “if the streams are perpendicular to the inlet stream, then it would seem to dictate that the axes of rotation of the flow patterns are primarily vertical.”

Applicants understand the source of the confusion and respectfully submit the following explanation to clarify the matter. In order for the axes of rotation of the flow pattern to be primarily horizontal (*i.e.*, parallel to the base of the settling chamber) and perpendicular to the

inlet stream at the same time, the internal portion of the settling chamber should be viewed in three dimensions. That is, the internal portion of the settling chamber includes three axes – (1) horizontal axis x; (2) vertical axis y and (3) second horizontal axis z, which comes in and out of the page. Thus, the axes of rotation for both flow patterns can be primarily horizontal and substantially perpendicular to the inlet stream if the recirculating flow patterns revolve around the horizontal z-axis coming out of the page. Accordingly, Applicants respectfully request withdrawal of the indefiniteness rejection.

35 USC §§ 102 and 103 Rejections

The Examiner maintains the prior rejection under 35 USC §102(b) of claims 22-31, 33-38, 40, 41, 46-50, 55, 57, 58 and 63-67 as anticipated by U.S. Pat. No. 5,174,455 to Zelazny et al. (hereinafter “Zelazny”). Applicants respectfully traverse these rejections.

With respect to independent claim 22, Applicants respectfully submit that Zelazny does not teach or suggest the limitation “wherein a ratio of height to width of the settling chamber is greater than 0.7. Although the Office Action, at page 3, asserts that Fig. 2 of Zelazny “clearly shows a structure with a ratio of height to width of the settling chamber greater than 0.7, “it is well established that patent drawings do not define the precise proportions of the elements and may not be relied upon to show particular sizes if the specification is completely silent on the issue.” *Hockerson-Halberstadt, Inc. v. Avia Group Int’l.*, 222 F.3d 951, 956 (Fed. Cir. 2000). As the M.P.E.P. explains, “when the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value.” M.P.E.P. § 2125.

Here, Zelazny’s written description does not indicate that the drawings are to scale and is silent as to the height and width of the device pictured at Fig. 2. Under these circumstances,

Applicants respectfully submit that the rejection of independent claim 22 in view of Zelazny should be withdrawn. Applicants further request allowance of dependent claims 23-37 as depending from an allowable base or intervening claim.

With respect to amended independent claim 38, Applicants respectfully submit that Zelazny does not teach or suggest the limitation reciting “a gas stream flow pattern comprising a first recirculating flow pattern in the bottom section and a second sympathetic recirculating flow pattern in the top section.” This limitation was taken from dependent claim 40 and incorporated into independent claim 38. As used herein, the term “sympathetic” means circulating in an opposite direction. For example, the first recirculating flow pattern circulates in a clockwise direction while the second “sympathetic” recirculating flow pattern circulates in a counterclockwise direction. Establishment of these sympathetic dual flow patterns is inherent to the chamber geometry with respect to the positioning of the inlet and outlet port, for example, as shown in Fig. 3.

In rejecting claim 40, the Office Action, at page 5, alleges that these flow patterns are inherent in Zelazny based upon the shape of the vessel and the particles separated therein. Applicants respectfully submit that not only has the Office Action impermissibly relied upon facts within the personal knowledge of the Examiner, but the assertion itself is inaccurate.

First, the Office Action appears to rely upon facts within the personal knowledge of the Examiner. Applicants respectfully call the Examiner’s attention to 37 C.F.R. § 1.104(d)(2), which specifies that “when a rejection is based on facts within the personal knowledge of an employee of the Patent Office, the data shall be as specific as possible and the reference must be supported, when called for by the applicant, by the affidavit of such employee.” Since the important “first and second flow pattern” limitations recited by independent claim 38 are not

taught by Zelazny, Applicants respectfully request that the Examiner provide either a reference or an affidavit detailing why the shape of the Zelazny vessel and the particles separated therein inherently lead to the first and second flow patterns claimed by Applicants in independent claim 38. In that way, Applicants can address any further rejections of independent claim 38 with specificity.

Second, Applicants disagree that Zelazny inherently teaches the first and second flow pattern limitations recited by independent claim 38. Proof of inherency requires that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. M.P.E.P. § 2112, *citing*, *Ex Parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (B. Pat. App. & Inter. 1990) (emphasis in original). The first and second flow patterns of Applicants' invention do not necessarily flow from the teachings of Zelazny. In fact, Zelazny Fig. 1 reveals one, not two flow patterns within the vessel.

For the foregoing reasons, Applicants respectfully submit that independent claim 38 and all claims dependent therefrom are allowable. Favorable action is earnestly solicited.

Applicants have amended independent claim 55 to include the novel limitations recited by claim 39. Applicants note that the Office Action did not reject claim 39 over the prior art. Since Applicants have addressed the objection to claim 39 under 37 C.F.R. § 1.75(c) above, Applicants respectfully submit that amended independent claim 55 and all claims dependent therefrom are allowable.

Applicants have amended claim 62 to include the novel limitations recited by claim 42. Applicants note that the Office Action did not reject claim 42 over the prior art. Since Applicants have addressed the alleged indefiniteness concerning claim 42, Applicants respectfully submit that independent claim 62 and all claims dependent therefrom are allowable.

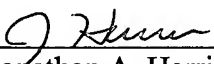
Finally, new independent claim 68 is allowable over the prior art of record because Applicants are aware of no prior teaching or suggestion of "a first recirculating flow pattern in the bottom portion and a second sympathetic recirculating flow pattern in the top portion," as recited by independent claim 68. The meaning of "sympathetic" is discussed above in connection with amended independent claim 38. Applicants respectfully submit that new independent claim 68 and all claims dependent therefrom (69-71) are allowable.

CONCLUSION

In view of the aforesaid, Applicants respectfully submit that all claims pending herein are in the condition for allowance. Favorable reconsideration is hereby requested. Further, the Examiner is requested to please contact the undersigned so that a telephone interview may be scheduled.

Respectfully submitted,

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